

Abstract of the Disclosure

A miniature fuel reformer utilizes a metal thin film and comprises a plurality of unit modules connected together. Each module has a cylindrical inner housing with top and bottom walls defining a hydrogen separation reaction chamber, an outer housing surrounding and radially spaced from the inner housing, a combustion catalyst chamber between the inner and outer housings, a fuel inlet at the inner housing top wall, a plurality of vertically spaced hydrogen gas separation cells arranged in the reaction chamber, a steam reforming catalyst in the reaction chamber between adjacent hydrogen gas separating cells, a plurality of vertically spaced cylindrical support members centrally arranged in the reaction chamber while defining a hydrogen passage communicating with the hydrogen separation cells, a permeate discharge tube coupled to the inner housing bottom wall, a plurality of raffinate outlets in the inner housing bottom wall, and a plurality of combustion fuel/air inlets respectively connected to the raffinate outlets.